

$ZH \rightarrow e e b b$

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Multi-Lepton Higgs
13JAN04

Scale Factors

Smeared electron pt

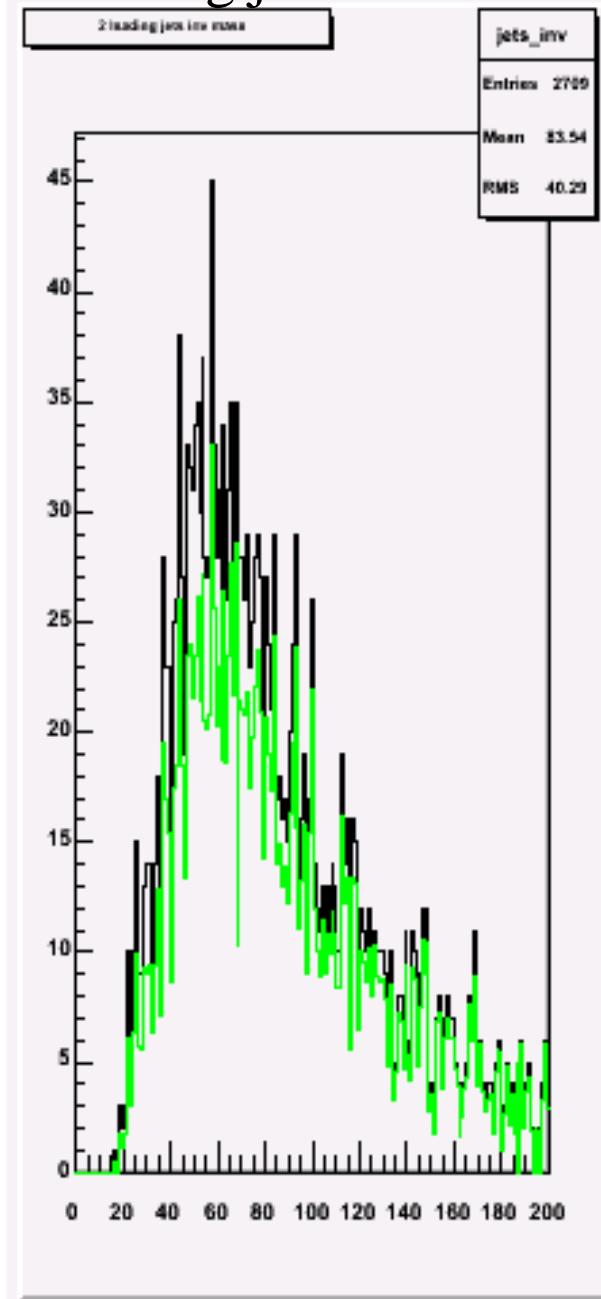
Scale factor for electrons eta, phi

Smeared the jet pt

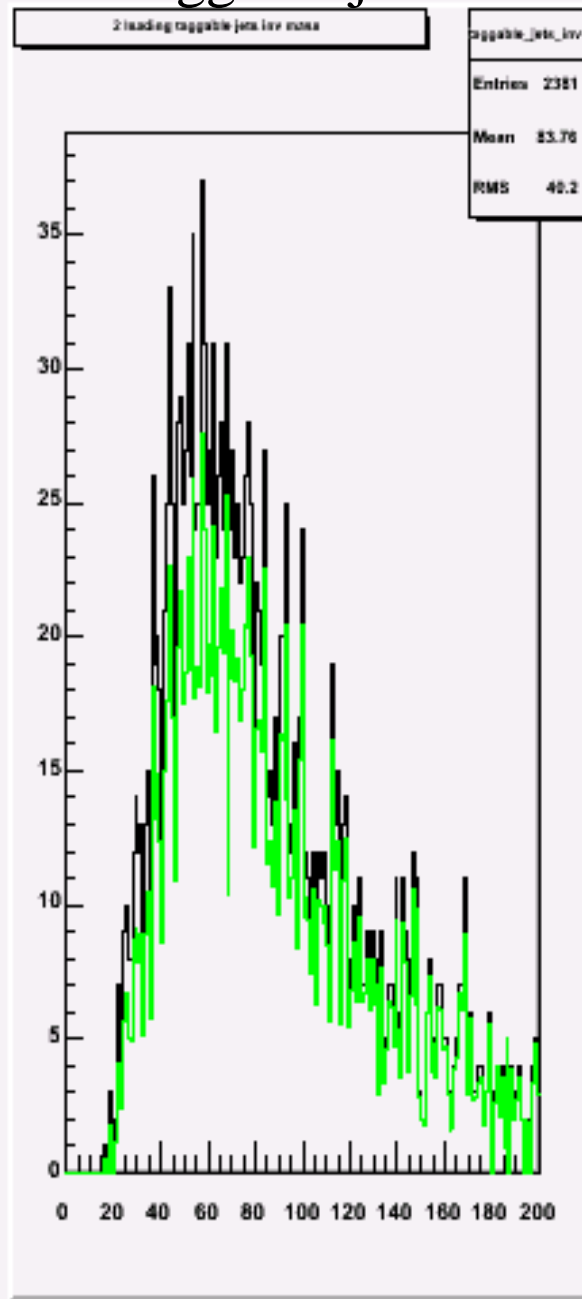
Jet Reco scale factor

jlip scale factor

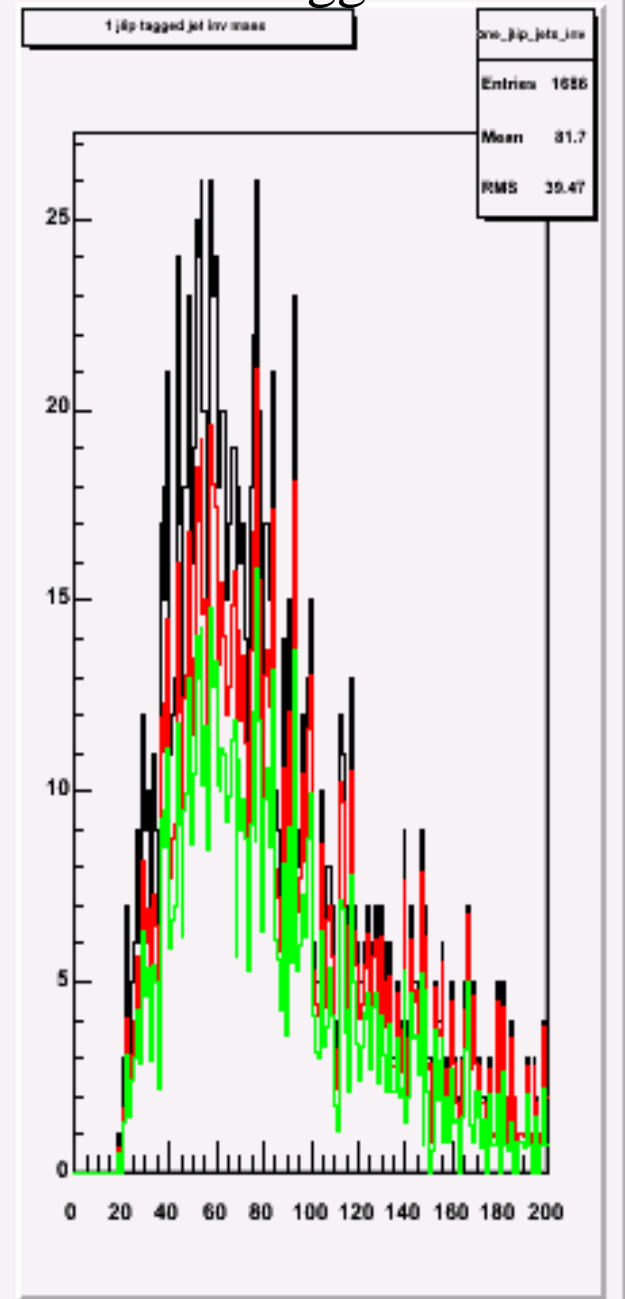
2 leading jets



2 taggable jets



one b tagged



Inv Mass distributions

Normalization of MC

$$\text{Sigma} = \text{Number events in MC} / \text{Luminosity}$$

Sigma MCFM NLO Z->ee inclusive $\sim 255\text{pb}$

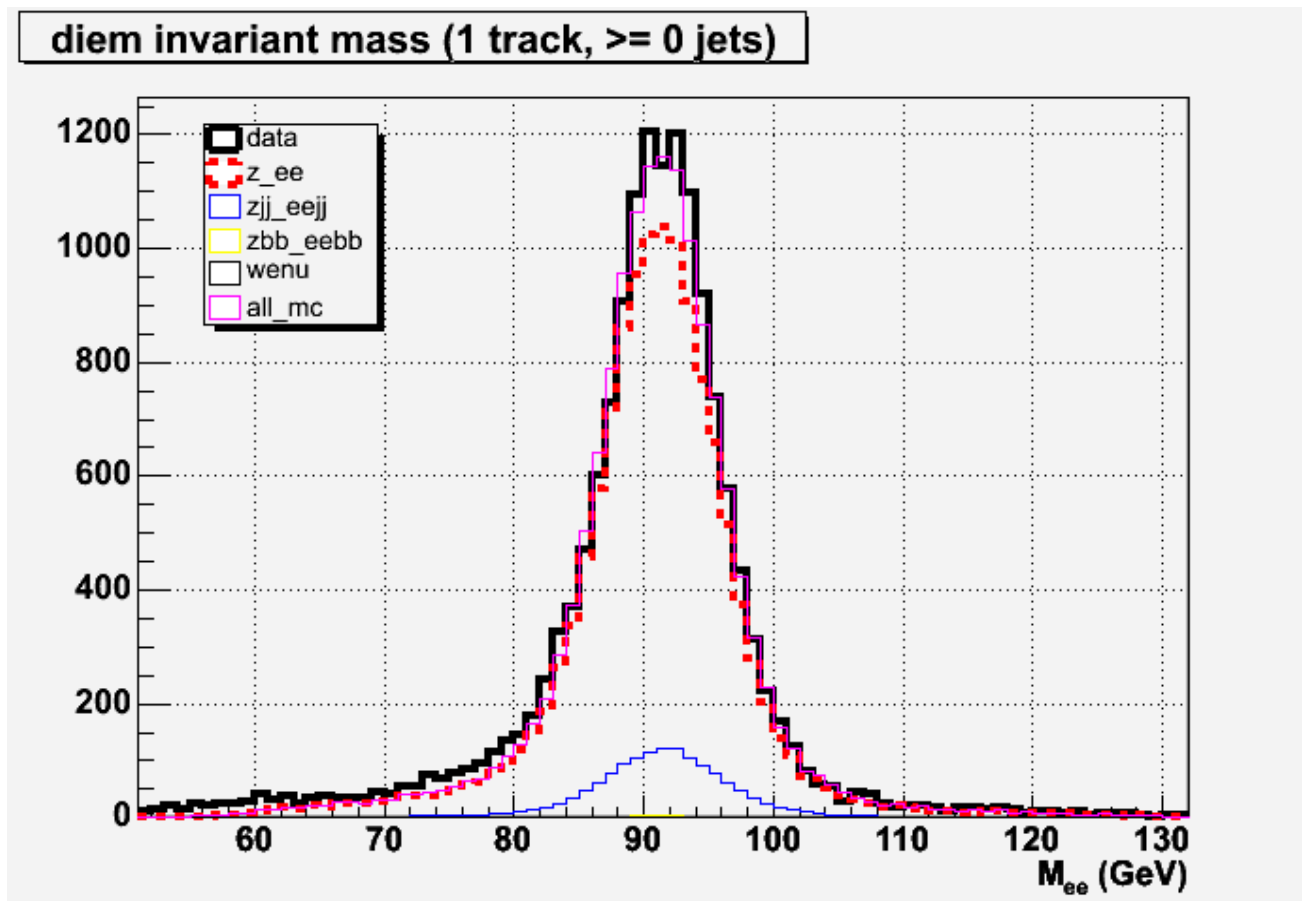
EM1TRK lumi 336.8

need MC events is = Lumi_data * MCFM cross section

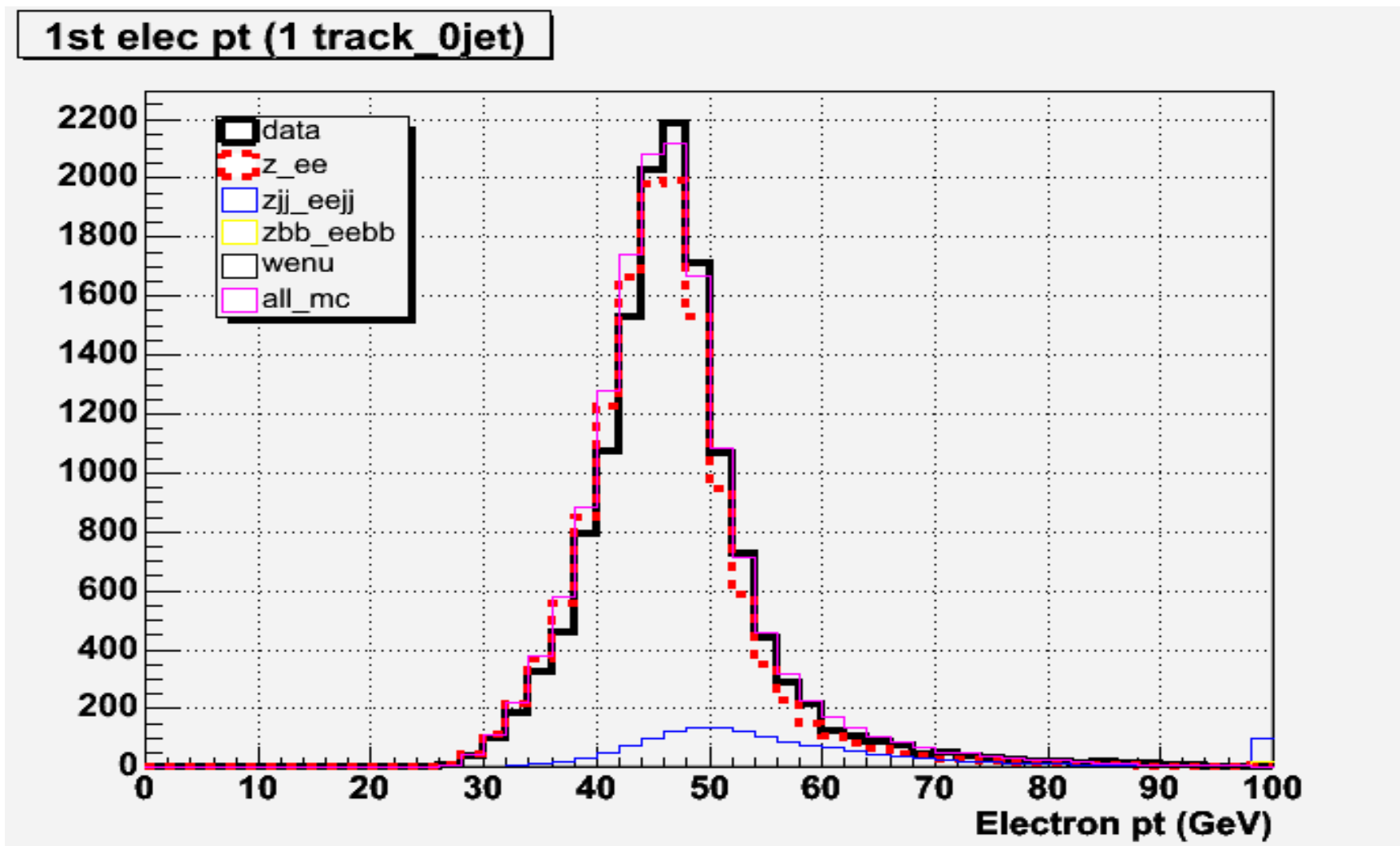
Scale down my MC distributions by:

events in MC / # events needed

Z peak

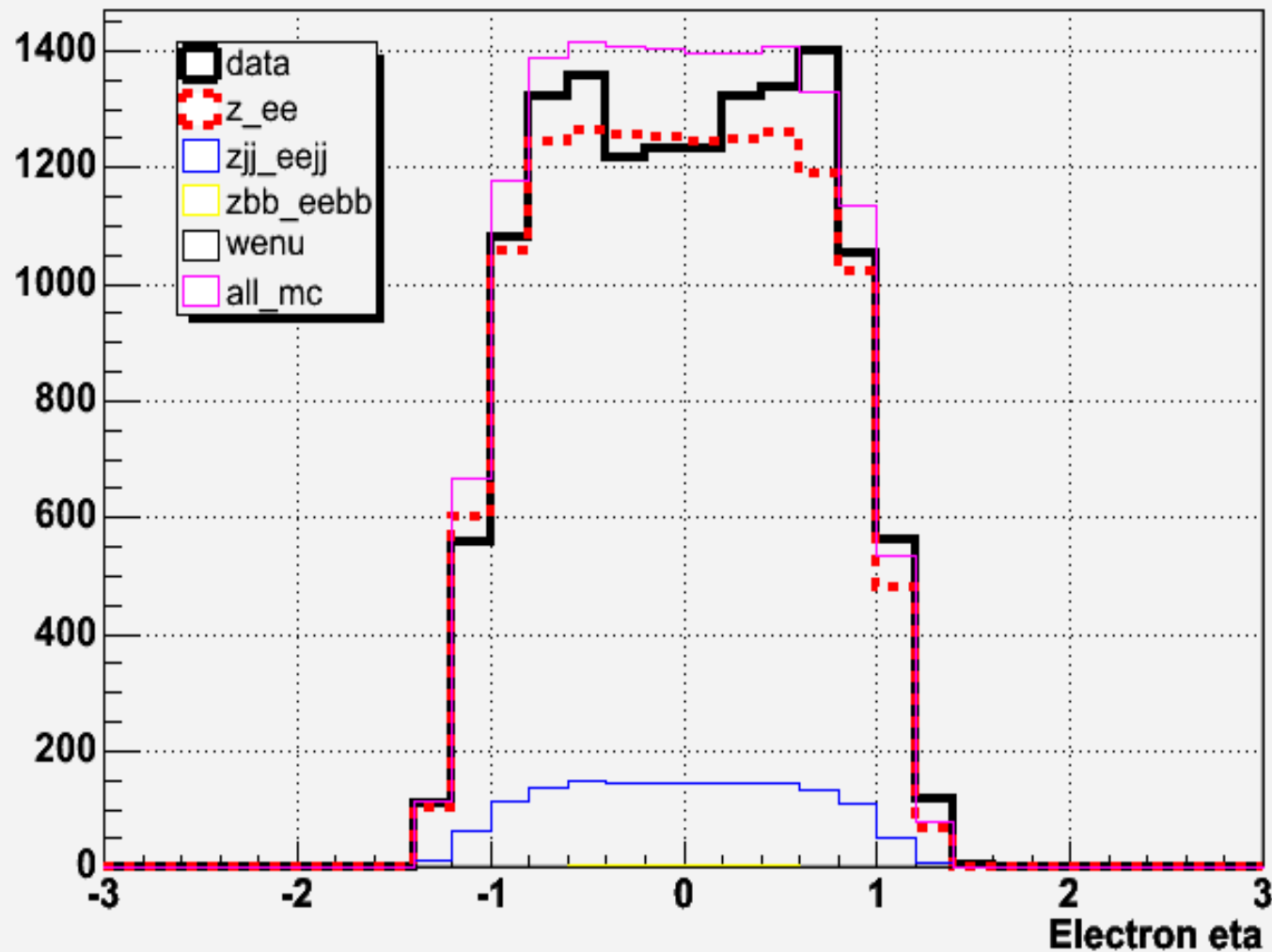


Leading electron pt



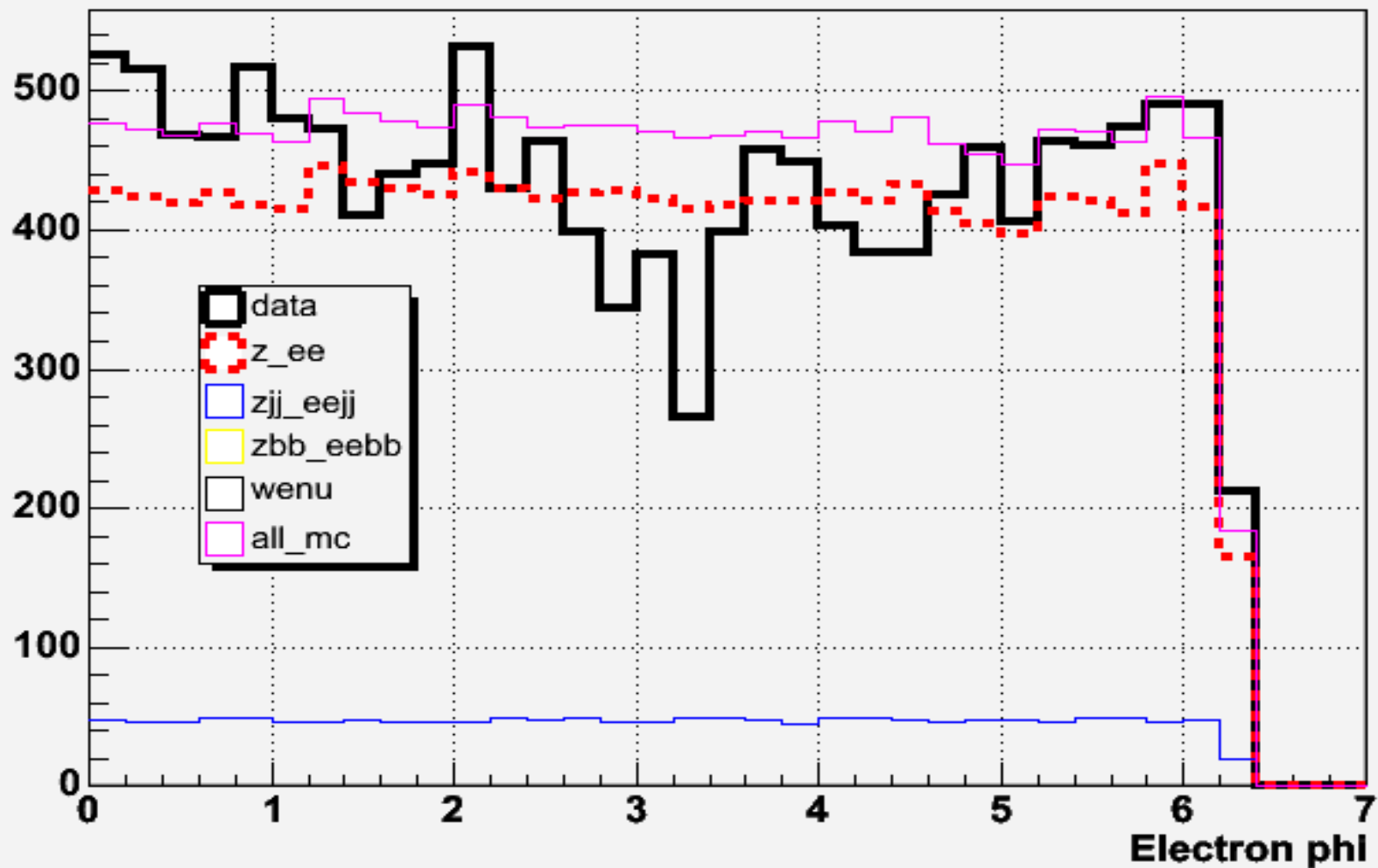
Eta leading electron

1st elec eta (1 track_0jet)

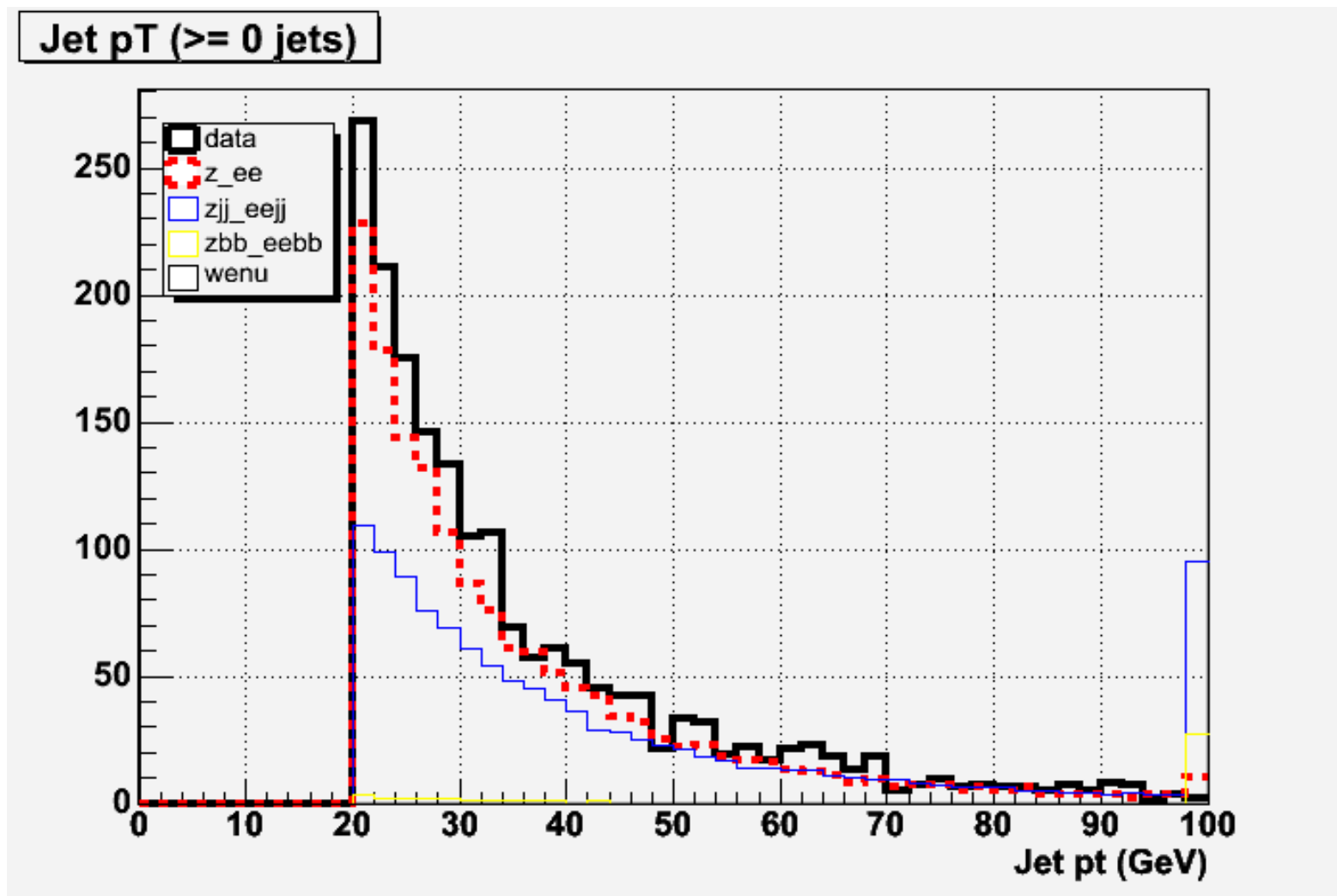


Leading electron phi

1st elec phi (1 track_0jet)

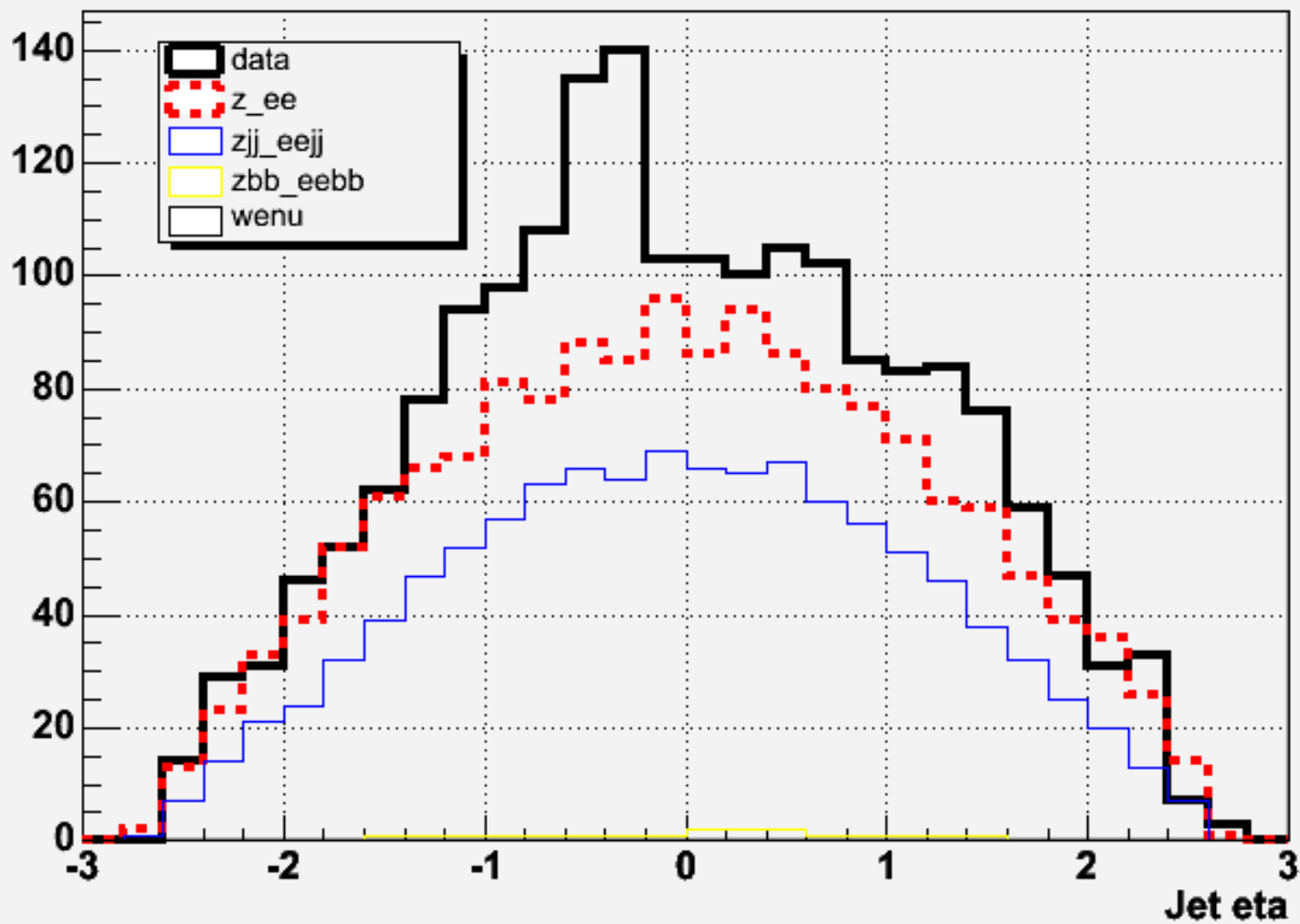


All Jets pt



All jets eta

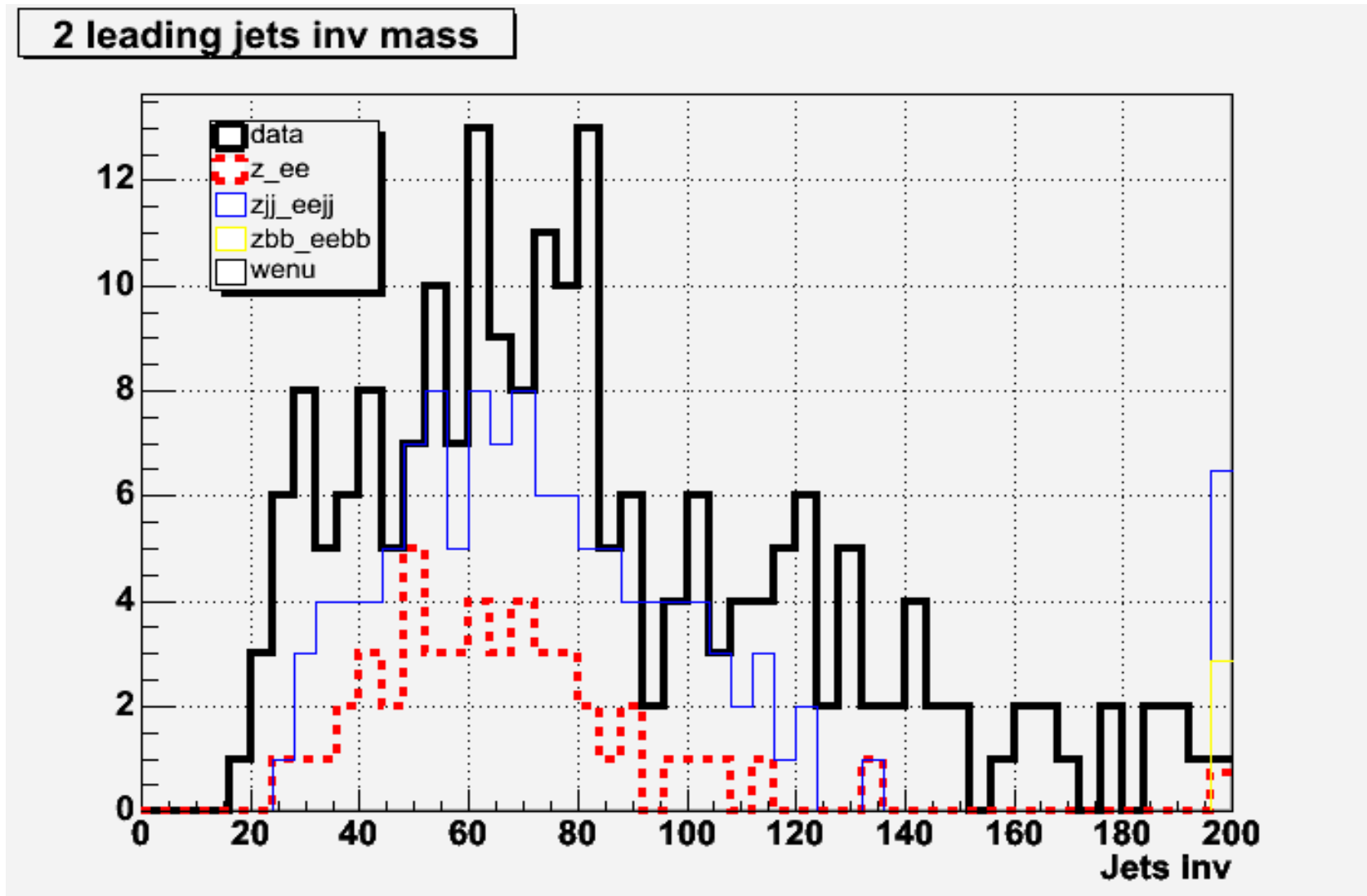
Jet Eta (≥ 0 jets)



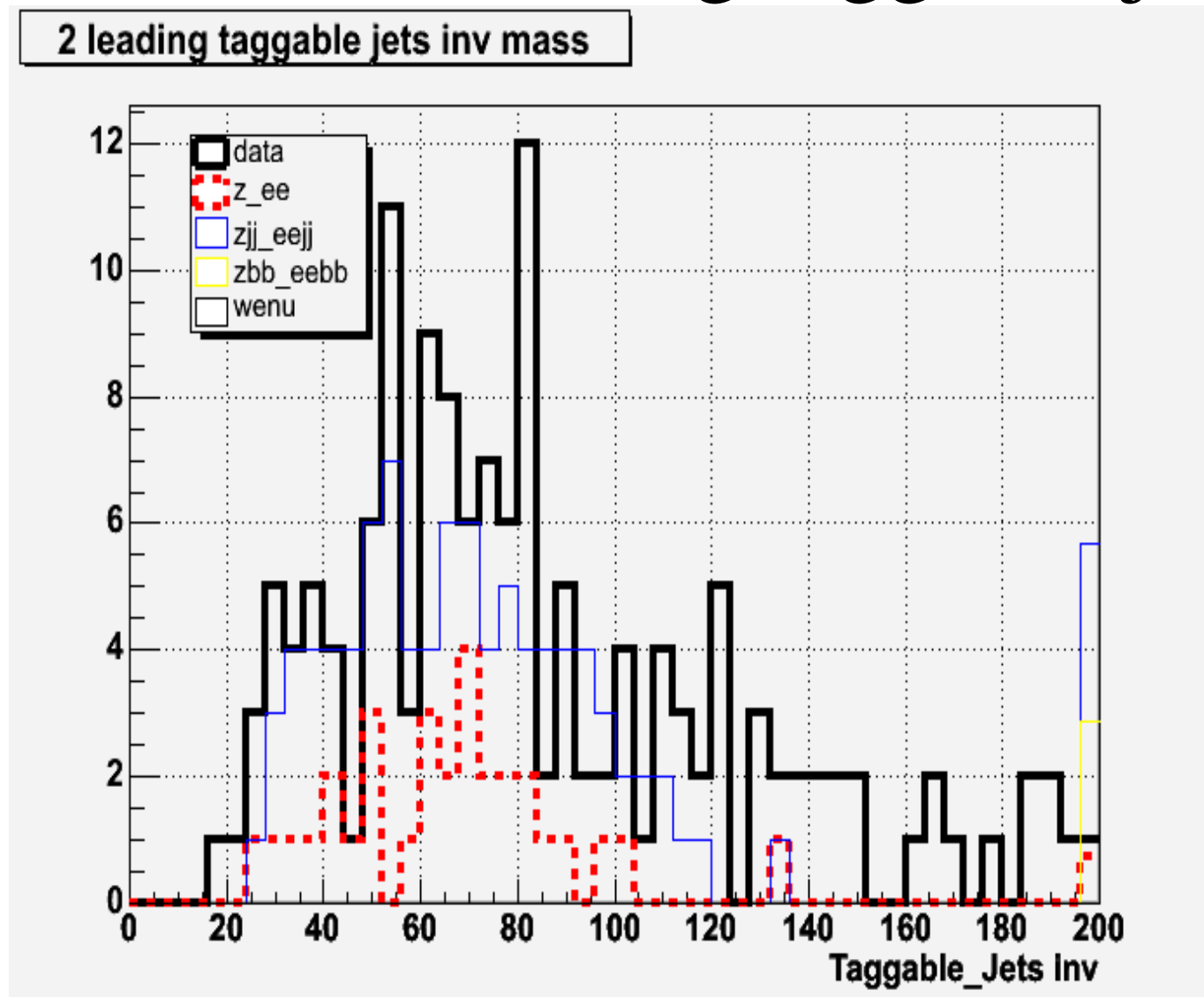
Some Numbers

# of Z bosons	- 13907
Z + 1 jet	1652
Z + 2 jets	219
Z + 2 taggable	170
Z + 1 jlip 1 tag	17
Z + 2 jlip	0

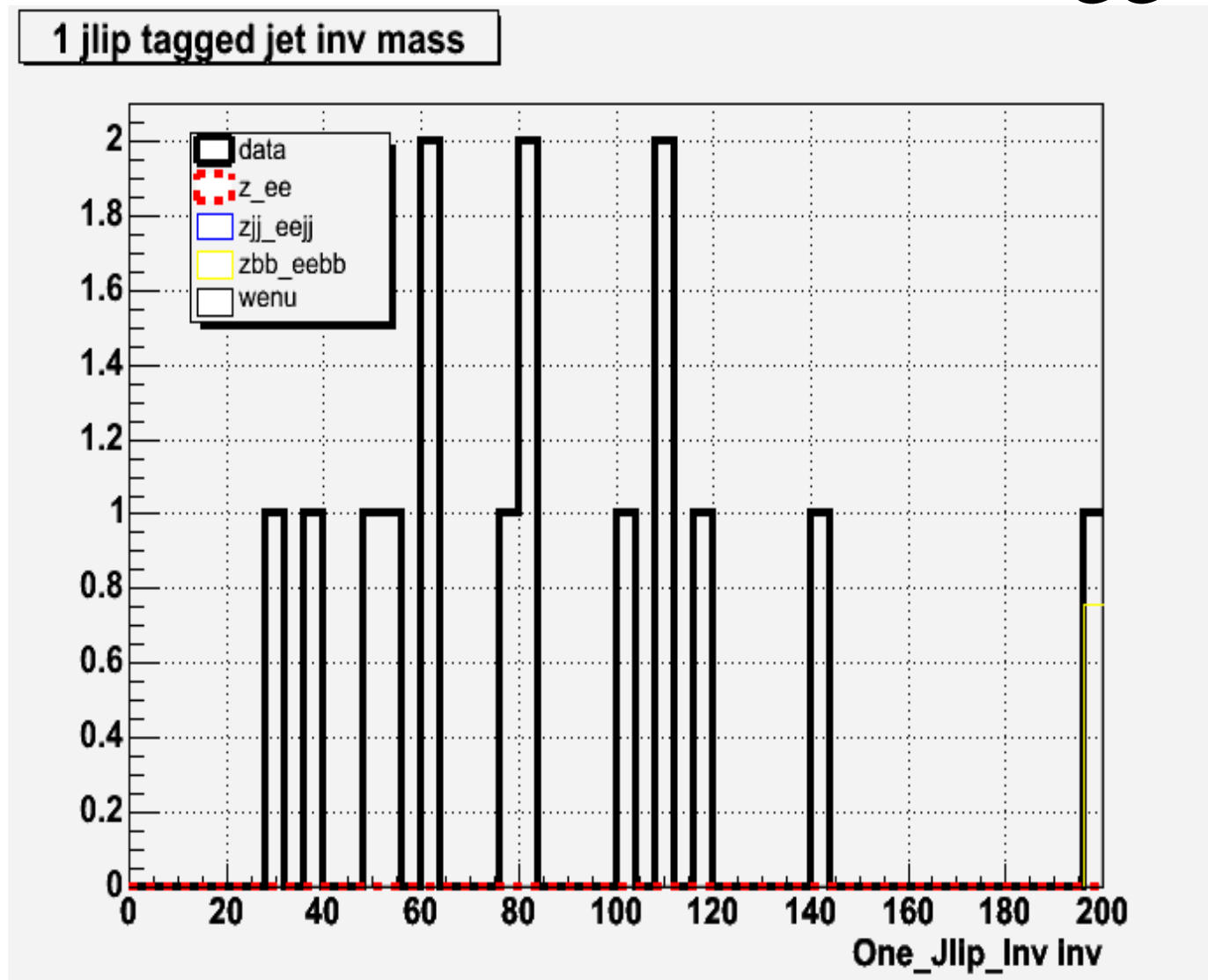
Inv mass 2 leading jets



Inv Mass 2 leading taggable jets



Inv mass 1 JLIP loose & 1 taggable



Conclusion

Need to understand the normalization of MC

Need to understand electron pt discrepancy

Replot all the distributions

Include the rest of the backgrounds